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AMSAT NEWS SERVICE
ANS-156

ANS is a free, weekly, news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

Please send any amateur satellite news or reports to:
ans-editor@amsat.org

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SB SAT @ AMSAT $ANS-156.01
Eclipses Continue to Affect AO-51 Operation

AMSAT News Service Bulletin 156.01
>From AMSAT HQ SILVER SPRING, MD.
June 5, 2011
To All RADIO AMATEURS
BID: $ANS-156.01

Last week's ANS bulletins reported that the AO-51 Command Team had successfully restored the satellite to partial operations. AO-51 at that time required a reload/reboot sequence every time it emerged from eclipse due to the Integrated Housekeeping (IHU) computer crashing from low battery voltage.

This week AMSAT VP-Operations, Drew Glasbrenner, KO4MA said, "AO-51's computer has been running for over 5 hours now. We have left the satellite in repeater mode 145.88/435.15 for the time being, at over 2 watts. We are very surprised by this development to say the least. Without Whole Orbit Data we are flying a bit blind, so would really like to know what the satellite is doing in eclipse. Please send your reports to me or to the amsat-bb. Southern hemisphere observations are most very welcome."

+ Robert, NH7WN reported from Honolulu: "AO51 was alive and well as she came out of eclipse on June 2. I was able to hear myself perfectly on the downlink (145.880 up and 435.150 down)."

+ Brett reported: "Heard on AO-51 today pass over Australia/New Zealand 145.880/435.150 Strong signals. Copied VK1AMG, ZL2BX, VK4VDX."

+ Alan, ZL2BX reported: "AO-51 solid signals in ZL. AOS (0459 UT) about five minutes after it came out of eclipse. Later on June 3, I can

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  finally confirm that AO-51 is loud and clear over ZL in full eclipse.
  with solid signals from the transponder."

+ Dave, KB5WIA reported from California, "AO-51 was in great shape as
  it passed south above the Pacific Ocean on June 3. I had a nice S9+
  full quieting downlink for the entire pass."

The Command Team has analyzed AO-51 live telemetry when the satellite
is in range of a ground station because Whole Orbit Data is lost when
the IHU Computer crashes. Drew, KO4MA summarized, "Cell 3 is reporting
0.0 volts, so it's clear it has shorted completely."

Donations for Fox and ARISSat-1 are being collected. If you haven't
yet donated, please drop by http://www.amsat.org, or call Martha at
the AMSAT Office at 1-888-322-6728 today and help us get Fox in space.

Keep up with the latest AO-51 Control Team News on-line at:
http://www.amsat.org/amsat-new/echo/CTNews.php

[ANS thanks AMSAT-NA VP Operations Drew Glasbrenner, KO4MA for the
 above information]

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SB SAT @ AMSAT $ANS-156.02
Reminder: The DARA Matching Gift Challenge

AMSAT News Service Bulletin 156.02
>From AMSAT HQ SILVER SPRING, MD.
June 5, 2011
To All RADIO AMATEURS
BID: $ANS-156.02

The Dayton Amateur Radio Association (DARA) has announced a fund
raising challenge for AMSAT whereby they will match on a 1:3 basis
up to $5,000.00 for donations made in 2011. That is, for every $3.00
that AMSAT raises, DARA will provide $1.00 up to a maximum of $5,000
donated by DARA.

AMSAT kicked off the fundraising campaign at the Hamvention, where
donations began count against this goal. Please consider making a
donation to AMSAT at Hamvention or anytime this Spring as we strive
to meet this goal.

We appreciate DARA's support for AMSAT and see this as an opportunity
for donors to increase the impact of their donations by taking advan-
tage of this matching program.

[ANS thanks AMSAT Headquarters for the above information]

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SB SAT @ AMSAT $ANS-156.03
AMSAT-NA Board of Directors Nominations Due by June 15th

AMSAT News Service Bulletin 156.03
>From AMSAT HQ SILVER SPRING, MD.
June 5, 2011
To All RADIO AMATEURS
BID: $ANS-156.03
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It is time to submit nominations for the upcoming open seats on the AMSAT-NA Board of Directors. The deadline is June 15th. A valid nomination requires either one Member Society, or five current individual members in good standing, to nominate an AMSAT member for the position.

Four director's terms expire this year:

Barry Baines, WD4ASW
Alan Biddle, WA4SCA
Drew Glasbrenner, KO4MA
Tony Monteiro, AA2TX

The four candidates receiving the highest number of votes will be seated as full Board members for two year terms. The two candidates receiving the next highest number of votes will be seated as alternate Board members for one year terms.

Beginning this year, in addition to traditional submissions of written nominations which remains unchanged and is the preferred method, initial nominations may be made by electronic means.=A0 These include e-mail, FAX, or electronic image of a petition. Electronic petitions should be sent to MARTHA@AMSAT.ORG or faxed to 301-608-3410. Written nominations, consisting of names, calls, and individual signatures, should be mailed to:

AMSAT-NA
850 Sligo Ave #600
Silver Spring, MD, 20910

No matter what method is used, petitions MUST arrive no later than June 15th at the AMSAT-NA office. If the nomination is a traditional written nomination, no other action is required. If it is other than this, i.e. electronic, a verifying traditional written petition MUST be received at the AMSAT-NA office at the above address within 7 days following the close of nominations on June 15th. ELECTRONIC SUBMISSIONS WITHOUT THIS SECOND, WRITTEN VERIFICATION ARE NOT VALID UNDER THE EXISTING AMSAT-NA BYLAWS.

Alan Biddle
WA4SCA
AMSAT Corporate Secretary

[ANS thanks Alan, WA4SCA, for the above information]

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SB SAT @ AMSAT $ANS-156.04
New Satellite Award: 5 in EM55

AMSAT News Service Bulletin 156.04
>From AMSAT HQ SILVER SPRING, MD.
June 5, 2011
To All RADIO AMATEURS
BID: $ANS-156.04

Damon, WA4HFN announced this week, "In an effort to help increase interest in satellites, we have created a new award for working five (5) different hams in the EM55 grid."

You do not have to be in your home grid to count the stations worked. There are several satellite ready hams in EM55. Here is the current list that we know of: WA4NVM, WA4HFN, WB4LHD, WA4OVO, KI4OTG, KD4NOQ, KJ4BIX, AND AJ4KF.

Send your log to WA4NVM or WA4HFN for checking, along with your
current mailing address. The award is free and should any
donations be sent, they will be forwarded to AMSAT along with
your call and name.

This award will be effective 1 June 2011, therefore, all contacts
must be on or after this date.

[ANS thanks Damon, WA4HFN for the above information]

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SB SAT @ AMSAT $ANS-156.05
AMSAT-DL Break FUNcube Dongle Distance Record

AMSAT News Service Bulletin 156.05
>From AMSAT HQ SILVER SPRING, MD.
June 5, 2011
To All RADIO AMATEURS
BID: $ANS-156.05

A story first reported on the Southgate ARC news web site reported
members of AMSAT-DL have received the Stereo B spacecraft at a dis-
tance of 219 million kilometers using an AMSAT-UK FUNcube Dongle
Software Defined Radio as the I.F. in combination with a downcon-
verter.

Stereo B transmits in the X band around 8 GHz so could not be receiv-
ed by the FUNcube Dongle directly since that covers 64-1700 MHz. A
downconverter was installed at the dish feed and the 1280 MHz output
was fed into the FUNcube Dongle SDR.

The frequency of Stereo B varies due to Doppler shift (of the rotating
Earth) and was calculated by the tracking software.

Watch Mario Lorenz DL5MLO explain how the record was broken Receiving
Stereo B with a FUNcube dongle and the Bochum 20m dish:
http://tinyurl.com/6eukmjv (Southgate)

ANS thanks Southgate ARC news site for the above information]

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SB SAT @ AMSAT $ANS-156.06
Satellite Shorts From All Over

AMSAT News Service Bulletin 156.06
>From AMSAT HQ SILVER SPRING, MD.
June 5, 2011
To All RADIO AMATEURS
BID: $ANS-156.06

+ EE Times published an article, "High-performance FPGAs take
  flight in microsatellites" featuring the U.K. Space Agency's
  UKube1 mission. This satellite will also fly a transponder
  based on AMSAT-UK's FUNcube design. The EE Times article is
  available on-line at: http://tinyurl.com/6he8n82
  A downloadable PDF file of the article can be found at:
  http://www.xilinx.com/publications/archives/xcell/Xcell75.pdf

+ Free Book Downloads! National Academies Press offers more than

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  4,000 titles as free PDF downloads. Begin on their download
  site at: http://www.nap.edu/ (Tammy Plotner on June 2, 2011
  at UniverseToday.com).

+ SO-67 has been reported to be active this past week. Monitor
  the satellite's schedule usually posted at:
  http://www.amsatsa.org.za/

+ The next Hudson Valley Satcom Nets are scheduled for June 9 and
  June 23, at 8PM EDT (UTC-4) on the 146.970 MHz repeater, (Pl 100),
  and also on Echolink node N2EYH-L. More info: http://www.hvsatcom.org
  (Stu, WA2BSS)

+ Angel Santana, WP3GW posted a video on YouTube about his live con-
  tact with the ISS this past week:
  http://www.youtube.com/watch?v=rdzRWEzKH_M

+ A video based on images captured by the NASA with the Cassini Imaging
  Science System team has been posted by Chris Abbas of Digital Kitchen:
  http://vimeo.com/24410924  The UniverseToday story can be found at:
  http://tinyurl.com/6xyp4ph (UniverseToday.com)

+ NASA reveals the excitement of planetary exploration in over 90 images
  that can be viewed on their science outreach program called From Earth
  to the Solar System (FETTSS) web page:
  http://www.fromearthtotheuniverse.org/index.php

+ This high definition short is a fascinating document. Narrated by
  NASA's Dr. Justin Wilkinson, it shows a tour of planet Earth as seen
  by astronauts, explaining what are the places that they first focus
  on while in orbit: http://www.youtube.com/watch?v=rj18UQjPpGA
  (Clint, K6LCS)

+ Check your ISS Keps! According to Roscosmos, the ISS boosted its orbit
  by 3.74 km Friday. This will result in a "slippage" of predicted times
  of approximately 70 seconds per day until the Keps catch up. The AMSAT
  NASA.ALL Keps will probably not reflect this until next week, so be
  certain to update from Celstrak or Space Track.

[ANS thanks everyone for the above information]

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SB SAT @ AMSAT $ANS-156.07
2011 AMSAT Field Day Competition

AMSAT News Service Bulletin 156.07
>From AMSAT HQ SILVER SPRING, MD.
June 5, 2011
To All RADIO AMATEURS
BID: $ANS-156.07

AMSAT Director of Awards, Bruce Paige, KK5DO says, "It's that time
of year again: Summer and Field Day!"

Each year the American Radio Relay League (ARRL) sponsors Field
Day as an emergency preparedness exercise. The event takes place
during a 24-hour period on the fourth weekend of June.  For 2011
the event takes place during a 27-hour period from 1800 UTC on
Saturday June 25, 2011 through 2100 UTC on Sunday June 26, 2011.
Those who set up prior to 1800 UTC on June 25 can operate only
24 hours.
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The Radio Amateur Satellite Corporation (AMSAT) promotes its own version of Field Day for operation via the amateur satellites, held concurrently with the ARRL event.

Bruce advises, "If you are considering ONLY the FM voice satellites like AMRAD-OSCAR-27, SaudiSat-Oscar-50, or AMSAT-OSCAR-51 for your AMSAT Field Day focus. Don't, unless you are simply hoping to make one contact for the ARRL rules bonus points."

The congestion on FM LEO satellites was so intense in prior years that we must continue to limit their use to one-QSO-per-FM-satellite. This includes the International Space Station. You will be allowed one QSO if the ISS is operating Voice. You will also be allowed one digital QSO with the ISS or any other digital, non-store-and-forward, packet satellite (if operational).

Please refer to these links for the full document of the AMSAT Field Day rules:
http://www.amsat.org/ (link on AMSAT.org front page to PDF file)
And, an alternative site is:
http://www.amsatnet.com/2011fd.doc (MS-Word Doc File)
http://www.amsatnet.com/2011fd.pdf (PDF File)

These documents also cover the message exchange format, scoring requirements, reporting requirements, station classes, etc.

[ANS thanks AMSAT Director of Awards, Bruce Paige, KK5DO for the above information]

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SB SAT @ AMSAT $ANS-156.08
Open Source Hardware List From Dayton TAPR Forum

AMSAT News Service Bulletin 156.08
>From AMSAT HQ SILVER SPRING, MD.
June 5, 2011
To All RADIO AMATEURS
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A discussion on the HPSDR-list contained a list from Open Source evangelist Bruce Peren's talk at the TAPR Forum in Dayton which provides supplier sources of relatively inexpensive Open Source" hardware.

Some of the specific hardware projects listed include:

+ OMAP L138. (TI chip with ARM and a DSP both on board)
  http://tinyurl.com/5wb8ocz

+ Papilo FPGA
  http://tinyurl.com/3xnfne8
  Also there is a 32-channel logic analyzer for $50 there.

+ Arduino http://www.arduino.cc/

+ $15 CPLD (you can build things from 74xx series gate equivalent logic): http://tinyurl.com/6h28olw

+ Bus Pirate
  http://tinyurl.com/47as6x9

Subscription information for the HPSDR list can be found at:

http://lists.openhpsdr.org/listinfo.cgi/hpsdr-openhpsdr.org

[ANS thanks George K9TRV and Bruce Perens for the above information]

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SB SAT @ AMSAT $ANS-156.09
US Army Supports Student Launch Program

AMSAT News Service Bulletin 156.09
>From AMSAT HQ SILVER SPRING, MD.
June 5, 2011
To All RADIO AMATEURS
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(Editor Note: This item originated on the Space-Travel.com web
 at http://tinyurl.com/6zsu4ea

White Sands Missile Range NM (SPX) Jun 03, 2011. A scientific rocket screamed skyward at Spaceport America May 20, 2011, as students from all over New Mexico, as well as Texas and Arizona came to see their scientific payloads fly into space during a scientific and educational mission supported by White Sands Missile Range.

The rocket carried 27 experiments from elementary, middle schools, high schools and universities into space before returning to earth, and landing at White Sands Missile Range, or WSMR. Under the New Mexico Space Grant Student Launch Program, students were able to assemble their own scientific payloads to be launched over 65 miles above the earth.

The student payloads, divided into seven different canisters within the rocket were a varied as the students who built them. Crammed into the canisters were cameras, radiation monitoring sensors, and other measurement devices, along with some more advanced systems.

"We had things from roasting green chilies to marshmallows to using a piezo electric board, tesla coils, and a lot of temperature monitors and Geiger counters, a bunch of variety, and a lot of magnetic experiments also," said Bruce Lewis with the space grant office and spaceport office.

The rocket launch represented more than just an educational opportunity for the students, but a cooperative effort between different organizations and companies. Even though the rockets flight began at Spaceport America, a state-run spaceport, it ended its flight on White Sands Missile Range and used range airspace.

"This is White Sands airspace that we're flying in, so White Sand controls that airspace for us. We have a great relationship with White Sands and we had a lot of support from (WSMRs) team," said Pat Hynes, director of the Space Grant Consortium.

The recovery of the rocket, and it's return to the students was conducted by White Sands Missile Range's Army Air. While the rocket was awaiting recovery White Sands Missile Range Chief of Staff Dan Hicks spoke with the students about the future of high technology careers and the kind of opportunities in those fields offered by WSMR and the Army.

"The majority of the workforce consists of engineers and mathematicians and other scientific fields. We've got about 4,000 people on the test center and garrison side that have that type of background. So in order

to be specific to what it takes to get a job out at White Sands one of the key things would be to continue your education into college and get a degree," Hicks said.

Hick Also answered questions from the students about spaceflight, how the range operates and the kind of radar systems used to track rockets like the one used in the experiment.

Data collected by these various devices had a variety of applications, with some being educational in nature, giving the students a glimpse of what it means to send something into space, and other experiments having more direct applications to the future of space flight.

"Some of it is great data; some of it is fun data. So you're got both the fun stuff and some things that are collecting real empirical data that NASA may be able to use in the future," Lewis said.

One experiment bridged the gap between the two. An experiment conducted by Aztec High School harvested the physical motion of the rocket in flight and converted it into electricity which was then used to power a small electric oven and roast a green chili. While roasting green chilies isn't critical to the future of space flight, the electricity could have other purposes.

"What we wanted to see is if you could power something in the rocket just using piezo electrics, just using the own forces of the rocket to generate it's own electricity while flying up into space," said Braden Goimarac, from Aztec High School's "Black Ops" science team.

[ANS thanks Space-Travel.com for the above information]

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In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Office. And with that keep in mind the ham who asked his dog if the name Pavlov rang a bell.

73,
This week's ANS Editor,
JoAnne Maenpaa, K9JKM